

Family Trichiridae
Hair-Tails

Body extremely elongate, greatly compressed on扁and like, tail tapering to long slender point behind. Head greatly compressed, pointed. Mouth moderate. mouth wide. teeth strong, rather large, unequal. maxillary slips below preorbital. Premaxillaries not protractile. Gill membranes separate, free from without. Gill 4, short behind fourth. Pseudobranchia 4 or 5. Central or more 100 to 150, of which 39 to 120 caudal. Air bladder present. Pyloric appendages numerous. Lateral line present. Dorsal and anal rays correspond to vertebrae, each interhaemal or interneural attached to haemal or neural

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spine. Dorsal very low, long,
usually continuous, rays all
similar or spinous. Anal very
long, spines numerous, low,
scarcely above surface of skin.
No caudal. Ventrals obsolete
or absent, thoracic.

Surface fishes of tropical
seas.

Genus Trichiurus Linnaeus
Hair Tails

Trichiurus Linnaeus, Syst. Nat.,
ed. 10, pt. 1, (1758) p. 246, (Type
Trichiurus lepturus Linnaeus,
monotypic.)

Gymnogaster Gronow, Zoophylac.,
(1763) p. 136, Species non binomial.
(Type Trichiurus lepturus Linnaeus,
monotypic.)

Enchelyopus (not Gronow 1763) Klein,
Neuer Schauplatz, vol. 1, (1775) p. 32,
(Type Trichiurus lepturus Linnaeus,
designated by Fowler, Proc. Acad. Nat.
Sci. Philadelphia, (1904) p. 770.)

Encheliopus Walbaum, Cetodi Pis.,
vol. 3, (1792) p. 583, Atypic. (Type
Trichiurus lepturus Linnaeus.)

Cat²⁹ *Gerres filamentosus* Cuvier

Gerres filamentosus Cuvier, Règne Animal,
ed. 2, vol. 2, 1828, p. 188 (on Wodowahah)
Russell, Fishes of Coromandel, vol. 1, 1803,
p. 52, fig. 67. (Vizagapatam); Hist. Nat.
Pois., vol. 6, 1831, p. 482 (Java, Vanicolo, ^{New Guinea}). +
Günther, Cat. Fishes Brit. Mus., vol. 1, 1859,
p. 345 (Aubona); vol. 4, 1863, p. 261
(Molucca Sea, Cape York, Pinang). +
Kner, Reise Novara, Fische, 1865, p. 56
(50 miles off Ceylon). + Day, Fishes of
Malabar, 1865, p. 159. + Steindachner,
Sitz. Ber. Akad. Wiss. Wien, math.-naturw.
Klasse, vol. 56, pt. 1, 1867, p. 317 (Cape York).
+ Peters, Monatsb. Akad. Wiss. Berlin,
1868, p. 257 (^{Catbalogan,} Samar). + Jouan, Rév. Soc.
Hist. Nat. Cherbourg, series 2, vol. 3, 1868,
p. 263 (Hong Kong). + Humboldt, Verhandel.
zool. bot. Gesellsch. Wien, vol. 20, 1870, p.
773 (Koseir, Red Sea). + Day, Fishes of
Proc. Zool. Soc. London, 1870, p. 698 (Andamans);

Dipinotus Rafinesque, Analyse de la
nature, 1815. p. 91, Ctypic. (Type
Trichurus lepturus Linnæus.)

Symploches Rafinesque, Analyse de
la nature, 1815. p. 91, Ctypic. (Type
Trichurus lepturus Linnæus.)

Euplectrogrammus Gill, Proc. Acad.
Nat. Sci. Philadelphia, 1862. p. 126,
(Type Trichurus muticus Gray,
orthotypic.)

Lepturus /not Moehring 1758, Brisson
1760) Gill, Proc. Acad. Nat. Sci.
Philadelphia, 1862. p. 126, (Type
Trichurus lepturus Linnæus, tautotypic.)

Lepturacanthus Fowler, Proc. Acad. Nat.
Sci. Philadelphia, 1904. p. 770, (Type
Trichurus savalla Cuvier, orthotypic.)

~~nearly opposite the hind appendages.~~

1 example. Varadero Bay, Mindoro. Length 59 mm.
Depth 3. Spinous dorsal tipped with black.

5257 U.S.N.M. Apia, Samoa.

Bureau of Fisheries. Length 78 to 240 mm.

3 examples.

66077 U.S.N.M. Matufuti, Ellice Islands.

Albatross collection (08855). Length 160 mm.

86332 U.S.N.M. Bonin Islands.

William Stimpson. Length 175 mm.

52970 A.N.S.P. Shortland Island, Solomons.

Alvin Seale. June-July 1903. Bishop Museum.

Length 130 mm.

52971 A.N.S.P. Fati, New Hebrides.

(April May 1903. Alvin Seale.) Bishop Museum.

Length 153 mm.

Body strongly compressed, with long, slender, strong, attenuated tail. Head long. Eye rounded, high. Mouth large, lower jaw protruded. Four long, strongly compressed, barbed upper teeth. Palatines toothed, none on vomer. Interorbital low. Gill rakers short slender points. Ribs very fragile. No scales. Lateral line decurved, concurrent with belly. Dorsal single, extends along whole back. Anal base more than half body length, of detached spines, anterior directed forward and posterior directed backward. Pectorals small. No ventrals.

Long, slender, band like, silvery fishes living in tropical or subtropical seas and very voracious, those of large size used as food. The known species are as follows below.

no diph

Follow-Incl Caps
Labeled

728

134789 760

Purchased.

From 52711 to 52716 A.N.S.P. Orion, Luzon. May 11, 1923. Rev. Joseph Clemens./

Length 60 to 140 mm.

4 examples. A.N.S.P. □ Bombay. Bombay Natural History Society. Length 144 to
□ 217 mm.

53023 A.N.S.P. Durban beach, Natal. H.W. Bell Marley. Length 243 mm.

Sciaena dubia Fowler and Bean, p. 127

Sciaena dubia FOWLER and BEAN, Proc. U.S. Nat. Mus., vol. 63, 1923,

p. 127. (No locality.)

Depth $3\frac{1}{4}$; head $3\frac{1}{4}$, width $2\frac{1}{10}$. Snout 4 in head; eye $3\frac{1}{4}$, greater than snout or interorbital; maxillary reaches $\frac{3}{5}$ in eye, expansion 3 in eye, length $2\frac{2}{5}$ in head; chin with 4 pores and short median barbel; teeth uniformly fine, minute, in narrow band in each jaw; interorbital 4; preopercle entire. Gill rakers 8 + 14, equal gill filaments or $2\frac{1}{2}$ in eye.

Scales (pockets) 42 in lateral line to caudal base; rows above lateral line parallel, below horizontal, largest and narrowly imbricated along sides medially; small scales on dorsal and caudal basally. Scales with 6 basal radiating striae; 30 short apical denticles; circuli fine.

D. X, I, 23, fourth spine $2\frac{1}{6}$ in head; A. II, 8, I, second spine $2\frac{1}{10}$; caudal damaged; caudal peduncle 3; pectoral $1\frac{2}{5}$; ventral $1\frac{4}{5}$.

Back dull slate brown, belly and lower surface pale, with silvery white sheen. Fins and iris all dull brown.

In many ways this species resembles Sciaena russeli (Cuvier) but differs in its greatly longer gill rakers.

83309 U.S.N.M. No locality (labeled "Fiji" which surely erroneous; obtained more likely in the Philippines?). Wilkes Exploring Expedition. Length 124 mm.

Analysis of Species

- a.¹ No ventrals.
- b.¹ Trichiurus. First anal spine not enlarged.
- c.¹ Eye 5 to $6\frac{1}{2}$ in head, 2 to $2\frac{1}{3}$ in snout.
- d.¹ Depth 14 to 18; head $6\frac{1}{3}$ to $8\frac{1}{4}$; eye 5 to 7 in head, 2 to $2\frac{1}{3}$ in snout.
- e.¹ Atlantic. lepturus.
- e.² Indo-Pacific. haemela.
- d.² Depth 24; head $7\frac{1}{2}$ to 8; eye 5 to $5\frac{1}{2}$ in head, 2 to $2\frac{1}{5}$ in snout. rollandi.
- c.² Eye $6\frac{1}{2}$ in head, $2\frac{1}{2}$ in snout; depth $18\frac{1}{5}$ to $18\frac{4}{5}$; head 8 to 9. japonicus.
- c.³ Eye $7\frac{1}{5}$ to 8 in head, $2\frac{3}{4}$ to $3\frac{1}{6}$ in snout; depth $15\frac{2}{3}$ to $15\frac{3}{4}$; head $7\frac{2}{5}$. coxi.
- b.² Lepturacanthus. First anal spine enlarged and others all more or less distinct; eye usually small. savala.
- a.² Eupleuragrammus. Ventrals as 2 small rudimentary scales. muticus.

Trichiurus lepturus Linnaeus

Trichiurus lepturus Linnaeus, Syst.
Nat., ed. 10, pt. 1, p. 246, 1758
(type locality, America; China).
— Günther, Cat. Fish. Brit. Mus.,
vol. 2, p. 346, (860)

— Jordan and Gilbert, Bull. U. S. Nat.
Mus., no. 16, p. 422, 1882. — Jordan
and Evermann, Bull. U. S. Nat. Mus.,
no. 47, pt. 1, p. 889, 1896; pt. 4, pl. 137,
fig. 375, 1900. — Fowler, Proc. Acad.
Nat. Sci. Philadelphia, p. 770,
1904 (Jan. 30, 1905) (San Domingo;
St. Martin's; Surinam; Brazil);
Proc. U. S. Nat. Mus., vol. 56, p. 280,
1919 (Loando, Angola).

{ p. 248, 1915 (Palm Beach), p. 532 (Port-
of-Spain, Trinidad); p. 129, 1919 (Rio
Janiero), p. 130 (Surinama), p. 137 (St. Martin's);
p. 147 (Kingston, Jamaica).

Trichius argenteus Shaw, General
Zool., vol. 4, p. 90, pl. 12, 1803
(on Linnæus).

Trichius haemela (not Forskål)
Fowler, Proc. Acad. Nat. Sci.
Philadelphia, p. 771, Nov. 1904
(Beirut, Syria).

caudal base, 75 along below; 9 to 10 above (10 above anal origin to lateral line. origin to lateral line on figure).

D. ~~X~~, I, 27 to 32, fourth spine 2 in total head length, first ray $2\frac{3}{4}$; A. II, 6 to 8, second spine strong, $1\frac{9}{10}$ in head or equals postocular; caudal $1\frac{1}{4}$ in head, cuneate; least depth of caudal peduncle $4\frac{1}{4}$; pectoral $1\frac{2}{5}$; ventral $1\frac{1}{3}$, first rays ends in short filament.

Above dilute blue gray, sides and below silvery. Iris yellow, brown above. Opercle with diffuse bluish purple blotch above. Fins yellowish. Dorsal and caudal dusky with brown. Length 282 mm. (Bleeker.)

Known only from Sumatra and Singapore.

17.

Depth $12\frac{1}{2}$ to $16\frac{1}{4}$; head $6\frac{1}{2}$ to $7\frac{3}{4}$,
Snout $2\frac{2}{5}$ to $3\frac{1}{6}$ in head, measured
from upper jaw tip; eye 5 to 7, 2
in snout, in interorbital;
maxillary reaches $\frac{2}{5}$ in eye, length
 $2\frac{1}{2}$ to $2\frac{2}{3}$ in head from snout
tip; teeth strongly knife like,
unequal; palatine teeth small,
uniserial, small; interorbital
 $6\frac{1}{3}$ to $7\frac{1}{6}$, little convex. Gill rakers
8 to 10 + 15 to 18, short slender
points, $\frac{1}{5}$ of eye.

Skin smooth. Lateral line
arched over pectoral, then slopes
down rather close to lower profile.
D. $12\frac{1}{2}$ to 138, fin height 4
in total head length; A. $8\frac{8}{8}$ to
107, origin about first $\frac{3}{8}$ in
entire body length, first but
trifle larger than others; pectoral
 $3\frac{1}{2}$ to $3\frac{1}{2}$, pointed.

Bright silvery white. Iris
white. Dorsal edge of with dusky
or blackish, rest of fin
whitish. Pectoral gray white.
Tropical Atlantic?

A. N. S. P., no. 11438. Beirut,
Syria. As Trichiurus haumela.

A. N. S. P., no. 11442. No data.

A. N. S. P., nos. 11443 to 11445.

Honto Domingo, W. I. Prof. W. M. Gabb.

A. N. S. P., nos. 11446 to 11447.

Beasley's Point, N. J. Samuel Ashmead.

A. N. S. P., nos. 11448 and 11449.

Turinam. Dr. C. Hering.

A. N. S. P., no. 11450. Coast of Brazil.
Prof. E. D. Cope.

A. N. S. P., no. 11451. East coast of
United States. Bonaparte Collection
(482). Dr. J. B. Wilson.

A. N. S. P., nos. 11452 and 11453.
St. Martin's, W. I. Dr. R. E. Van Rijgersma.

Cat¹²⁹ *Johnius microlepis* Bleeker ⁽¹⁸²⁹⁾

~~*Johnius microlepis* Bleeker, Act. Soc.~~

Sci. Ind. Néerland. (Sumatra), vol. 5,
1858-59, p. 11. Palembang, Brussi River
mouth, Sumatra.

~~Pseudosciaena microlepis Bleeker,~~
~~Verhandel. Kon. Akad. Wetensch. Amsterdam,~~
~~seriff 3, vol. 14, 1874, p. 23 (Sumatra;~~
~~Singapore); Acta Ichth. Ind. Néerland.,~~
~~vol. 9, 1877, pl. (4) 387, fig. 3.~~

Depth $3\frac{4}{5}$ to 4; head $3\frac{1}{2}$ to $3\frac{1}{3}$, width
 $2\frac{1}{4}$ to $2\frac{1}{3}$. Snout $3\frac{2}{3}$ in head from
snout tip; eye $3\frac{2}{3}$ to $4\frac{1}{2}$, $1\frac{3}{4}$ in snout,
greater than interorbital; maxillary
reaches opposite eye center, length $2\frac{3}{5}$
in head; teeth villiform, outer row
enlarged above, inner row enlarged
below; interorbital 8; preopercle
edge entire.

Scales 90 along above lateral line to

A.N.S.P., No. 11454. Ft. Macon,⁵²⁹
L.C. Dr. H. C. Garrow.

interorbital rather low; preopercle edge denticulate.

Scales 75 to 80 along above lateral line, 65 to 70 along below; 8 or 9 above, figure shows 10 above anal origin; vertical fins all largely with fine scales basally.

D. VIII, I, 24 to 28 (II spines on figure), third spine $2\frac{1}{10}$ in head, fourth ray $2\frac{1}{3}$; A. II, 6 or 7, second spine moderate, $3\frac{1}{5}$ in head or $1\frac{3}{4}$ in postocular, third ray $2\frac{1}{4}$ in head; caudal 1, cuneate; least depth of caudal peduncle 4; pectoral $1\frac{1}{3}$; ventral $1\frac{1}{2}$, first ray ending in filament.

Above bluish or yellowish gray, sides and below yellowish silvery. Iris yellowish. Fins yellowish with more or less gray brown tint. Length 105 to 130 mm. (Bleeker.)

East Indies, Indo China.

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Trichiurus haumela Forskål

Clupea haumela Forskål, Descript.
Animal., (1775, pp. ^{13,} 78) (type locality,
Mochha, Red Sea). — Bonnaterre,
Tabl. Ichth., p. 187, 1788 (Red Sea).
— Gmelin, Syst. Nat. Linn., vol. 1,
p. 1408, 1789 (Red Sea). —
Walbaum, Artedi Pisc., vol. 3, p.
43, 1792 (copied).

Trichiurus haumela Cuvier, Hist.
Nat. Poiss., vol. 8, p. 249, 1831 (Malabar).
— Rüppell, Neue Wirbelth., Fische, p.
41, 1835 (reference). — Swainson,
Nat. Hist. Animals, vol. 2, p. 254,
fig. 72, 1839 (on Cuvier). — Cantor,
Journ. Asiatic Soc. Bengal, vol.
18, pt. 2, p. 1095, 1849 (Pinang Sea,
Malay Peninsula, Singapore).

Paregula bicornis Steindachner,
 Denkschr. Akad., Akad. Wiss., math.-
 physik. Klasse, vol. 41, pt. 1, 1879, p. 8.
 Hobson Bay and Murray River, Victoria.

Depth 2; head $3\frac{1}{2}$. Eye subequal with snout, about 3 in head. Maxillary reaches eye, about 3 in head. Interorbital low.

Scales 34 or 35 in lateral line to caudal base and 2 or 3 more in latter; 4 or 5 above, 11 below; 3 rows on cheek to preopercle ridge.

Dorsal IX, 16 or 17, last spine long as first soft ray or 3 in total head; A. III, 18, like dorsal, last spine $3\frac{1}{4}$; caudal small, emarginate; least depth of caudal peduncle $2\frac{2}{3}$; pectoral 1; ventral $2\frac{1}{2}$.

General color silvery. Upper parts blue and sides with copper tinge.

— Bleeker, Verh. Batavia. Genoot.
 (Madura), vol. 22, (1849) p. 4,
 (Bangcallang, Kammal, Tanjung);
 Nat. Tijds. Ned. Indie, ^{vol. 2}
Jordan, Madras Journ. Nat. Hist. Sci., p. 139, 1851. — Bleeker, Verh.
 (1851) p. 471, (Rio); vol. 3, Nat. Tijds. Ned. Indie
Batavia. Genoot
 p. 53 (Singapore), p. 409
1852
 (Pamangkat), p. 690 (Wahai),
 p. 740 (Macassar); Verh. Batavia.
 Genoot. (Makreel.), vol. 24, ~~1852~~,
 p. 41, ¹⁸⁵² (Batavia, Samarang,
 Rembang, Tegal, Pasuruan,
 Surabaja), (hal. Ich. Bengal),
 vol. 25, (1853) p. 42, (reference);
 Nat. Tijds. Ned. Indie, vol. 7,
 (1854) p. 227, (Macassar), p. 312
 (Bantem, Anjer, Tjiringin), p.
 361 (Batjan); vol. 8, ~~1855~~, p.
1855 345, (Tjikol, Sumatra), p. 393
 (Amboina); vol. 9, (1855) p. 394,
 (North Pasuruan); vol. 11, ~~1856~~,
 p. 253, (Luboeha, Batjan), p. 419
1856,

(Muntok, Banksa); vol. 12, ~~1856~~,
 p. 214¹⁸⁵⁶ (Nias); Act. Soc. Sci. Ind.
 Neerl., vol. 1, no. 3, (1856) p. 9,
 (Macassar); vol. 2, no. 7, ~~1857~~ p.
 5¹⁸⁵⁷ (Amboina); Nat. Tijds. Ned.
 Indie, vol. 15, (1858) p. 242,
 (Singapore); vol. 16, (1858) p. 407,
 (Japara, Java); vol. 17, ~~1858-59~~,
 p. 130¹⁸⁵⁹⁻⁶⁰ (Atapoepoe, Timor); Act.
 Soc. Sci. Ind. Neerl., vol. 5, no. 7,
~~1858-59~~, p. 2¹⁸⁵⁸⁻⁵⁹ (Sinkawang, Borneo);
 vol. 8 (Sumatra), (1859) p. 12,
 (Benculan); Nat. Tijds. Ned.
 Indie, vol. 21, (1860) p. 138 (Muntok,
 Banksa). — Günther, Cat. Fish.
 Brit. Mus., vol. 2, (1860) p. 348,
 (Malay Peninsula and Timbana).
 — Bleeker, Verslag. Akad. Wet.
 Amsterdam, vol. 12, (1861) p. 64,
 (Pinang).

— Day, Fishes of Malabar, p. 66,
1865. — Kner, Reise Hovara, Fische,
p. 140, 1865 (Java; 50 miles off
Ceylon). — Playfair, Fishes of
Zanzibar, p. 55, 1866 (Bagamoa),
east coast of Africa. —
Klunzinger, Verh. zool. bot. Gesell.
Wien, vol. 21, p. 471, 1871 (Red Sea).

— Day, Fishes of India, pt. 2, p. 201,
1876. — Klunzinger, Fische Roth. Meer.,
vol. 1, p. 121, 1884.
— Károlyi, Termesz. Füzetek, Budapest, vol. 5, p. 160, 1881 (thatany, Celebes).
— Meyer, Anal. Soc. Espan. Hist. Nat.,
Madrid, vol. 14, p. 23, 1885 (Manado,
Celebes; Manila Bay); — Day,
Fauna British India, Fishes, vol. 2,
p. 134, 1889.
— Gorgoza, Anal. Soc. Espan. Hist. Nat.,
Madrid, vol. 17, p. 289, 1888 (Manila).

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— Elera, Cat. Fauna Filipinas, vol. 1, 1895, p. 505, (Luzon, Cavite, Santa Cruz).
1895

— Jordan and Snyder, Ann. Zool. Japon., vol. 3, 1901, p. 65, (Yokohama, Kagoshima, Kochi).

— Fowler, Journ. Acad. Nat. Sci. Philadelphia, ser. 2, vol. 12, 1904, p. 506, pl. 7, lower figure, (Padang); Proc. Acad. Nat. Sci. Philadelphia, 1904 (January 30, 1905) p. 771,

(Padang material); 1905 p. 499, (Baraya, Borneo). — Steindachner, Denks. Akad. Wiss. Wien, math.-naturw. Kl., vol. 71, p. 142, 1907 (Tschin).

— Evermann and Seale, Bull. Bur. Fisher., vol. 26, 1906 (1907) p. 62 (San Fabian). — Jordan and Richardson, Bull. Bur. Fisher., vol. 27, 1907, p. 256, (Gillchrist and Thompson, Ling. South Afr. Eng., vol. 6, pt. 3, p. 238, 1909, hatched) (Manila). — Snyder, 1908, p. 254 (Manila).

Proc. U. S. Nat. Mus., vol. 42, 1912, p. 411, (Tokyo), p. 496 (Okinawa). — Weber, Liboga Exped., vol. 57, p. 406, 1913 (Lombok; Flores; Bawean).

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- Gilchrist and Thompson, Ann. Durban Mus.,
vol. 1, pt. 4, p. 397, May 21, 1917 (reference).
- Fowler, Copeia, no. 58, ^{n. 63,} June 18, 1918, p.
~~63~~ (Philippines).
- Barnard, Ann. South Afric. Mus., vol. 21, pt. 1,
p. 792, Oct. 1927 (Aguulhas Bank, Natal, Delagoa
Bay, Chinde).
- Fowler, Mem. Bishop Mus., vol. 10, ~~1928~~,
p. 134 (compiled). — McCulloch, Austral.
Mus. Mem., no. 5, pt. 2, p. 268, September
10, 1929 (reference).
- Fowler, Proc. Acad. Nat. Sci. Philadelphia,
vol. 86, (1934) p. 71 (Sanoer, Bali), p.
441 (Natal; Durban; Uvongo); vol. 87,
p. 138, 1935 (Bangkok).

Enchelyopus haemela Bleeker, Ned.
Tijds. Dierk., vol. 1, (1863) p. 153,
(Galela, Halmahera), p. 240 (Obi
Island), p. 270 (Atapupu, Timor);
Verslag. Akad. Wet. Amsterdam,
ser. 2, vol. 2, (1868) p. 291 (Rio,
Bintang), p. 300 (Waigin).

Trichurus lepturus (not Linnaeus)
Lacépède, Hist. Nat. Poiss., vol. 2,
opp182tepl. 7, fig. 1, 1800. — Buchanan-Hamilton,
Fishes of Ganges pp. 31, 364, 1822.
Trichurus malabaricus Day, Fishes
of Malabar, 1865 (p. 65, pl. 5) (type
locality, Malabar).
J. Cochin,

Trichurus sawala (not Bleeker) Elera,
Cat. Fauna Filipinas, vol. 1, 1895, p.
505 (Luzon, Manila Bay, Cavite). —
Jordan and Seale, Bull. Bur.
Fisher., vol. 26, 1906 (1907), p. 13
(Cavite).

Body oblong, compressed. Mouth protractile. Teeth small, pointed, none on palate. Preopercle edge denticulate. Opercle without spine. Dorsal and anal with low, basal, scaly sheaths. Lateral line complete. D. IX, 17, continuous, equally high. A. III, 18.
One species.

Cant 29 Parequula melbournensis (Castelnau)
Gerris melbournensis Castelnau, Proc.

Zool. Acclimatis. Soc. Victoria, vol. 1,
1872, p. 158. Melbourne; vol. 2, 1873, p.
37 (Melbourne); Record London Internat.
Exhib., 1873, pt. 7, no. 5, p. 14 (Victoria).

Chthamalopteryx melbournensis Gilby,
Proc. Zool. Soc. London, 1881, p. 616,
fig. — McCulloch, Zool. Results Endeavour, vol. 1, pt. 1, see
2, 1911, p. 637 (Flinders Island, Murray River, Kingston, Investigator Group).
Parequula melbournensis Waite, Records
South Australia Mus., vol. 2, no. 1, April
23, 1921, p. 106, fig. 163.

Trichiurus lajor Bleeker, Nat.
Tijds. Ned. Indie, vol. 7, (1854)
p. 228, (type locality, Manado,
Celebes). — Kner, Reise Novara,
Fische, (1865), p. 141, (Manila).
— Károlyi, Termesz. Füzetek, Budapest,
vol. 1, p. 160, 1881 (Sarawak).

Gerris argyreus Klunzinger 1884
is described with depth 3, equals
head (figure shows head $3\frac{1}{5}$);
snout shorter than eye (figure shows
it longer); second dorsal spine nearly
double eye (figure shows it little over
2), $1\frac{1}{4}$ (~~approximately~~ 2?) in body
depth (figure shows $1\frac{3}{5}$); second anal
spine high as second, somewhat stronger,
shorter than eye (figure shows it equal);
pectoral scarcely reaches anal. The
figure is interesting as differing from
any of Bleeker's figures of East Indian
gerrids in that the last dorsal spines
are shown equally high as the soft
rays following. Three rows of scales
are shown on the cheek, of which the lowest
row on the preopercle flange. In the
dorsal view of the head the scaleless
premaxillary groove is carried back

Trichurus japonicus (not Schlegel)
Steindachner, Sitzs. Ber. Akad. Wiss.
Wien, math.-naturw. Kl., vol. 60, pt. 1,
T. 563, 1870 (Singapore).

2564. D. 5444. Atalaya Point,⁵⁴¹
Batag Island, S. 65° E., 5.1 miles (lat.
 $12^{\circ}43'51''N.$, long. $124^{\circ}58'50''E.$),
east coast of Luzon. In 308 fathoms.
June 3, 1909. Length 198 mm.

10185. D. 5658. Cape Loko Loko, S. 31°
W., 12 miles (lat. $3^{\circ}32'40''S.$, long.
 $120^{\circ}31'30''E.$), Gulf of Boni. In
510 fathoms. December 19, 1909.
Length 310 mm.

7933 and 7934. D. 5361. Corregidor
Light, S. 89° W., 7.2 miles (lat. $14^{\circ}24'$
 $15''N.$, long. $130^{\circ}41'30''E.$), Manila Bay.
In 12 fathoms. February 8, 1909.
Length 323 to 368 mm.

11764. Iloilo market. June 2, 1908.
Length 223 mm.

5699. Manila market. April 27,
1908. Length 524 mm.

Cavet²⁹ *Johnius trachycephalus* (Bleeker)
Corvina trachycephalus Bleeker, Natuurk.
 Tijdschr. Nederland. Indie, vol. 1, 1850, p.
 269. Bandjarmassing, in rivers (Borneo).
Sciaena trachycephalus Günther, Cat.
 Fishes Brit. Mus., vol. 2, 1860, p. 293 (compiled).
Schmett., Cat. Mus. Godeffroy, vol. 4, 1869,
 p. 16 (Saigon).

Johnius trachycephalus Bleeker, Verhandel.
 Kon. Akad. Wetensch. Amsterdam, vol. 14,
 series 3, 1874, p. 41 (Sumatra; Borneo); Atlas
 Ichth. Ind. Néerland., vol. 2, 1877, pl. (3)
 386, fig. 1.

Depth 4 to $4\frac{1}{3}$; head $3\frac{1}{2}$ to 4, width 2.
 Snout $3\frac{1}{3}$ in head; eye $4\frac{1}{3}$ to $5, 1\frac{1}{3}$ in
 snout, $1\frac{1}{3}$ in interorbital; maxillary
 reaches $\frac{2}{3}$ in eye, length $2\frac{1}{2}$ in head;
 lower jaw little shorter than upper; teeth
 villiform, outer upper row but little
 enlarged, mandibular subequal;

21571. Manila, Luzon. December 10, 1907. Length 253 mm.

19503. Manila market. December 12-18, 1909. Length 250 mm.

2653, 2655, 2656. D. 5547.
Hobble Point, Tulayan Island (E.),
S. 38° E., 9.5 miles (lat. $6^{\circ}07'20''$
N., long. $121^{\circ}13'40''$ E.), vicinity
Jolo Island. In 155 fathoms.
September 15, 1909. Length 190 to
340 mm.

11735. Sandakan market,
Borneo. March 2, 1908. Length
360 mm.

20896. Santiago River, Tagapac
Bay, Luzon. February 20, 1907.
Length 303 mm.

short filamentous tip.

1624

mostly silvery, some yellow tints
on fore part of dorsal and paired fins.
Length 175 mm.

3582. D. 5391. Tubig Point
(Aestacado Island), N. 31° E., 3
miles (lat. $12^{\circ}13'15''$ N., long. 124°
 $05'03''$ E.), between Samar and
Masbate. In 118 fathoms.
March 13, 1909. Length 385 mm.

10184. No tag. 1909.
Length 365 mm.

India, Burma, Malacca, Indo
China, China. Also reported from the
Philippines by Elera. Quite likely Corvina
gryphota Richardson may be a synonym.

It is incompletely noticed as follows:

maxillary slips below preorbital its
entire length; upper teeth villiform, with
stronger, subulate outer row; lower
teeth villiform; minute pores on snout,
5 large pores at end of mandible;
preopercle with wide set slender denticles.

Scales tender, mucry, very deciduous;
cheek and mandible scaly. Lateral line
of simple tubes, boldly marked anteriorly.

D. $\text{X}, \text{I}, 29$; A. $\text{II}, 7$ or 8 , second spine
not strong, little shorter than soft rays;
caudal partly rhomboidal; ventral with

U. S. N. M., No. 12628. No locality.
British Museum. Length 350 mm.
Eye $2\frac{1}{6}$ in snout.

U. S. N. M., No. 72077. Hafa, Okinawa.
Albatross Collection. 1906. Length
480 mm.

U. S. N. M., No. 72078. Hafa.
Albatross Collection. 1906. Length
467 mm.

U. S. N. M., No. 72079. Hafa.
Albatross Collection. 1906. Length
517 mm.

U. S. N. M., No. 72080. Hafa.
Albatross Collection. 1906. Length
520 mm.

U. S. N. M., No. 56006. Philippines.
Bureau of Fisheries (3381). Length
490 mm.

U. S. N. M., No. 72635. Batavia, Java.
Bryant and W. Palmer. Length
255 mm. Eye 2 in snout.

No diff.

Landed
Follow-Incl Caps

134789

674

slits and pores on chin moderate. Mouth moderate or small, inclined or oblique. Chin with pores, rarely with small rudimentary barbel at symphysis. Teeth villiform; outer premaxillary row enlarged, sometimes inner mandibular row enlarged; no distinct canines. Interorbital rather wide, slightly convex. Gill rakers rather few, short. Pseudobranchiae present. Air bladder present. Pyloric coeca few or in moderate number. Scales ctenoid, extend over head and snout, more or less over vertical fins and mostly adherent. Lateral line with simple, bifurcate or branched tubes. Dorsals as 2 deeply separated fins, first of 9 or 10 spines joined at least basally with 23 to 32 soft rays. Anal with 1 or 2 spines, 6 to 9 rays, second spine variably weak or strong. Caudal variably with age truncate, cuneate or rounded. Pectoral rays 16 to 20. Outer or first ventral ray often as prolonged filament, especially in young.

The largest group of the Indian and West Pacific sciaenids, also with fewer species in the tropical Atlantic. As here understood they differ from Sciaena chiefly in the absence of the mandibular barbel. I do not accept Jordan and Thompson's conclusions as to the nomenclature of this genus. It appears to me formal designation of type is surely a a priori claim in all cases. Bola Buchanan-Hamilton cannot be admitted as a sciaenid as its tautonymic genotype Cyprinus bola is a cyprinid.

Johnius amoyensis (Bleeker)

Pseudosciaena amoyensis BLEEKER, Nederl. Tijdschr. Dierk., vol. 1,

1863, p. 144 (Amoy); vol. 2, 1865, p. 56 (Amoy).

Sciaena amoyensis STEINDACHNER, Denkschr. Akad. Wiss. Wien, Math.-nat. Kl.,
vol. 59, pt. 1, 1892, p. 362 (Shanghai).

U. S. N. M., No. 72636. Batavia,
Java. Bryant and W. Palmer.
April 2, 1909. Length 216 to 240 mm.
Two examples. Eye $2\frac{1}{10}$ to $2\frac{1}{5}$ in
snout.

U. S. N. M., No. 88031. Benkulen,
Sumatra. Lieut. H. C. Kellers.
Length 234 to 263 mm. Two examples.
Large isopod on tongue. Eye $2\frac{1}{10}$
to $2\frac{1}{4}$ in snout.

A. N. S. P., ^{No. 27492} ~~one example~~. Padang,
Sumatra. A. C. Garrison and W. M.
Heller. 1905. Length 687 mm.

no dips

Follow-Incl Caps
Sept faded

652

164789

676

D d². Dorsal rays (very 23 in *taeneus*) 24 to 26.

i. Spinous dorsal dusky marginally; no dark opercular blotch

taeneus

ii. Spinous dorsal black in young, leaving only black edge with age; diffuse dark blotch on opercle, paler with age

coiboro

C c². Depth of body $3\frac{1}{2}$ to 4.

G g¹. Body without black transverse bands.

T h¹. Opercle and first dorsal pale

borneensis

T h². Opercle blue gray; first dorsal black on upper half, outer edges of caudal, anal and paired fins gray

hosseus

G g². Silvery with 4 or 5 black transverse bands

maculatus

A b². Dorsal rays 26 to 30.

B i¹. Depth of body $\frac{4}{5}$ to $3\frac{1}{2}$.

T j¹. Teeth above uniserial, lower biserial at least anteriorly

heptolepis

T j². No enlarged inner row of mandibular teeth.

T i². No pale band along lateral line.

I l¹. Eye $3\frac{4}{5}$ to $4\frac{1}{8}$ in head

belengerii

I l². Eye $4\frac{1}{3}$ to $4\frac{2}{5}$ in head

novae-hollandiae

T k². Pale band along lateral line

garutta

T j³. Inner row of mandibular teeth, at least distinctly larger than others.

1539

Depth 14 to 16; head $6\frac{1}{3}$ to $7\frac{1}{3}$,
 $2\frac{2}{3}$ to vent, $2\frac{2}{3}$ in tail, width
 $5\frac{1}{5}$ to $5\frac{1}{2}$ in its length. Snout
 $2\frac{3}{4}$ to $2\frac{4}{5}$ in head from snout
tip; eye 6 to $6\frac{1}{2}$, $2\frac{1}{3}$ in snout,
equals interorbital; maxillary
reaches $\frac{1}{5}$ to $\frac{1}{8}$ in eye, length
 $2\frac{2}{5}$ to $2\frac{1}{2}$ in head from snout
tip; 4 front upper canines,
followed by row of 10 or 11 each
side of smaller ones; lower
front pair of canines, followed
by row of 10 to 12 each side;
interorbital $6\frac{2}{5}$ to $7\frac{1}{5}$ in
head, low, flat or broadly
depressed medially; mandible
 $1\frac{3}{4}$ to $1\frac{4}{5}$ in total head length.
Gill rakers 5 + 8; short, sharp
points.

No scales. Lateral line

Follow-Incl Caps
8 pt. leaded

~~Pseudosciaena amblyceps Bleeker~~

134783 ✓

670

Pseudosciaena amblyceps BLEEKER, Nederlands Tijdschr. Dierk., vol. 1,
1863, p. 142 (Amoy); vol. 2, 1865, p. 5 (Amoy).

Meded.

Corvina amblyceps BLEEKER, Versl./Akad. Wet. Amsterdam, ser. 4, vol. 4,
1870, p. 250 (China). - SAUVAGE, Bull. Soc. Philom. Paris, ser. 7,
vol. 5, 1881, p. 106 (Swatow, China).

Sciaena amblyceps STEINDACHNER, Deutschr. Akad. Wiss. Wien, Math.-nat.
Kl., vol. 59, pt. 1, (1892, p. 63 (Shanghai). - RUTTER, Proc. Acad.
Nat. Sci. Philadelphia, 1893, p. 76 (compiled).

Sciaena crocea RICHARDSON, Journ. China Japan, 1846, p. 224 (South of
China, Canton). - ELERA, Cat. Fauna Filip., vol. 1, (1895, p. 501
(Cavite; Luzon).

Pseudosciaena polyactis BLEEKER, Versl. Meded. Akad. Wet. Amsterdam, Proc.
Verb., vol. (24), Nov. 1871, Verh. Kon. Akad. Wet. Amsterdam, vol. 18,
(1879, p. 5, pl. 1, fig. 1 (Shanghai, China). - JORDAN and SEALE, Proc.
U.S. Nat. Mus., vol. 29, 1906, p. 53 (probably Shanghai).

Pseudosciaena undovittatus JORDAN and SEALE, Proc. Davenport Acad. Sci.,
vol. 10, (1905, p. 11, pl. 6 (Hong Kong).

Othonias undovittatus JORDAN and HUBBS, Mem. Carnegie Mus., vol. 10, No.
2, June 27, 1925, p. 244 (type and paratypes of *Sciaena manchurica*;
Osaka).

Corvula argentata (not HOUTTUYN) JORDAN and STARNES, Proc. U.S. Nat. Mus.,
vol. 31, 1906, p. 518 (Port Arthur, Manchuria).

Sciaena manchurica JORDAN and THOMPSON, Proc. U.S. Nat. Mus., vol. 39,
1911, p. 255, fig. 3 (Port Arthur, Manchuria). - JORDAN and METZ, Ann.
Carnegie Mus., vol. 6, 1913, p. 38, fig. 28 (copied). ✓

decurved behind depressed pectoral, falls to lowest fourth in body depth.

D. 134 to 137, fin height $3\frac{3}{4}$ in total head length; A. CV to CVII, short, broad, truncated points or spines; pectoral rays I, 10, fin 3 to $3\frac{1}{5}$ in total head length.

Silvery white, back and head above grayish. Iris whitish. Pectoral gray. Dorsal with upper half grayish, anteriorly gray black, whole base whitish. Red Sea, Arabia, East Africa, Delagoa Bay, Natal, India, Ceylon, Malaya, East Indies, Philippines, Siam, Rio Kiri, Japan.

No depus

Lead
Follow-Incl Caps

Clip locality 647

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Synodus ogiware NICHOLS, Bull. Amer. Mus. Nat. Hist., New York, vol. 32, art. 7, July 19, 1913, p. 180, fig. 2. (Shimonoseki, Japan)

Depth $3\frac{1}{5}$ to $3\frac{4}{5}$; head $3\frac{1}{5}$ to $3\frac{2}{5}$, width $2\frac{1}{8}$ to $2\frac{3}{5}$. Snout 4 to 5 in head from snout tip; eye $3\frac{1}{4}$ to 5. greater than snout in young to 1 to $1\frac{1}{3}$ in head, $1\frac{1}{5}$ to $1\frac{3}{4}$ in interorbital; maxillary reaches $\frac{4}{5}$ or to opposite hind eye edge, expansion $1\frac{1}{5}$ to $1\frac{3}{4}$ in eye, length 2 to $2\frac{1}{10}$ in head from snout tip; mouth terminal, lower jaw slightly protruding; chin with pair of pores; upper teeth with narrow villiform band and outer row of curved canines exposed with closed mouth; lower teeth as single row of well spaced canines and small intervening teeth; interorbital $3\frac{1}{4}$ to $3\frac{3}{5}$, broadly convex; preopercle edge little distinct, only few weak spinules along lower edge; preorbital width from eye to maxillary $\frac{1}{2}$ of eye. Gill rakers $11 + 18$, lanceolate, little greater than gill filaments or $\frac{1}{4}$ in eye.

Scales 51 to 55 in lateral line to caudal base and 32 or 33 more over caudal fin; 6 above, 8 or 9 below; 27 to 35 predorsal, of which 13 to 17 to occiput; 11 rows across cheek; soft vertical fins and ventrals finely scaled. Scales with 20 basal radiating striae; 29 to 30 small apical denticles, with 3 to 9 transverse series of basal elements; circuli moderately fine.

D. IX, I, 32, I or 33, I, fourth spine $3\frac{1}{5}$ to $2\frac{2}{5}$ in total head length, first ray 3 to $3\frac{7}{8}$; A. II, 10, I or I, I, second spine 6 to $7\frac{1}{2}$, first ray 2 to 3; caudal $1\frac{1}{5}$ to $1\frac{1}{2}$, concave; least depth of caudal peduncle $3\frac{3}{5}$ to $3\frac{3}{4}$; pectoral $1\frac{1}{8}$ to $1\frac{1}{3}$; ventral $1\frac{1}{3}$ to $1\frac{2}{5}$.

Back brown, sides and below silvery white. Slightly gray tinge on opercle, not conspicuous. Iris silvery white. Dorsals and caudal brown, dusted with little darker terminally. Lower fins whitish.

Trichiurus roelandti Bleeker

Trichiurus roelandti Bleeker,
Nat. Tijds. Ned. Indie, vol. 20,
(1859-60, p. 33) (type locality,
Hoengi doeri in Barkayang,
West Borneo^(name only)); Act. Soc. Sci. Ind.
Neerl. (Borneo 13), vol. 8, p. 35,
1860 (description of type) [not seen].

eye, length 3 in head; interorbital $2\frac{2}{3}$, convex. Gill rakers short, lanceolate.

Scales 45 in lateral line to caudal base and 3 more on latter; 6 above, 12 below, 25 predorsal with premaxillary groove broadly scaleless. Scales with 5 basal radiating striae; circuli fine.

D. IX, II, I, first ray $2\frac{1}{2}$ in head; A. III, 7, I, third spine $2\frac{2}{5}$, first ray $2\frac{4}{5}$; caudal 1, forked; ventral $1\frac{1}{5}$; pectoral $2\frac{3}{4}$ in combined head and body to caudal base.

Back pale olive brown, sides, below and iris silvery white. Back and side above with 8 rows of scales each with dark longitudinal line. Dorsals and caudal grayish, other fins whitish.

Cape Colony, Natal.

53020 A.N.S.P. Natal. ³H. W. Bell Marley.
Length 195 mm. 1925.

? Trichiurus glossodon Bleeker,
 Nat. Tijds. Ned. Indie, vol. 20, p.
 331, 1859-60 (type locality,
 Soengidveri in Bangkayang,
 western Borneo) (name only);
Act. Soc. Sci. Ind. Neerl. (Borneo
 13), p. 38, 1860 (description of
 type) [not consulted]; Verslag. Kon.
Alsd. Wet. Amsterdam, vol. 12,
 p. 31, 1861 (Singapore).

Trichiurus auriga Klunzinger,
Fische Roth. Meek, vol. 1, p. 121,
 pl. 12, fig. 1, 1884 (type locality,
 Roseir, Red Sea). — Weber,
Siboga Exped., vol. 57, Fische, p.
 406, 1913 (lat. $10^{\circ} 27.9' S.$, long.
 $123^{\circ} 28.7' E.$, Timor Sea, in 216
 meters).

distinct at angle.

Veins 57 along above lateral line,
50 in lateral line, 52 to 56 along below
lateral line; 5 or 6 above, 15 below;
cyclid on snout and below eyes,
elsewhere ctenoid.

D. X, I or II , 26 to 29, second spine $\frac{2}{3}$ in
head, first ray $\frac{7}{8}$; A. II , 7, second spine
 $2\frac{1}{3}$ or equals postorbital, robust, first
ray $1\frac{4}{5}$; caudal $1\frac{1}{3}$, cuneate; least depth
of caudal peduncle $3\frac{4}{5}$; pectoral $1\frac{1}{3}$;
ventral $1\frac{3}{5}$.

Nilverij, shot with gold and purple.
First dorsal with upper half black.
Soft dorsal, caudal and anal dark
externally and last fin with dark basal
band.

(Day.)

Depth 24, 3 in head; head $7\frac{1}{2}$ to 8 in fish to caudal, $1\frac{3}{5}$ in trunk. Snout 3 in head from snout tip; eye $7, 2\frac{1}{2}$ in snout; maxillary reaches nearly opposite front eye edge, length $2\frac{3}{4}$ in head from snout tip; interorbital low.

d.?, fin height $3\frac{1}{2}$ in total head; pectoral 5, low.

Silvery, fins hyaline.
Length 260 mm. (Klunzinger.)

Red Sea, East Indies.
Weber gives depth 22 or $2\frac{2}{3}$ in head, his specimen 320 mm.
I am unable to consult the descriptions of either Trichiurus glossodon or T. roelandti.

Analytic of Species
a Loricarius. no ventrals;

549

Trichiurus japonicus (Schlegel)

Trichiurus lepturus japonicus
Schlegel, Fauna Japonica, Poiss.,
pts. 5-6, p. 102, pl. 54, 1844 (type
locality, Simbara Bay, Japan).

Trichiurus japonicus Bleeker,
Verh. Batavia. Genoot. (Nat. Ichth.
Japan), vol. 26, pp. 5, 98, 1857
(Nagasaki); Act. Soc. Sci. Ind.
Neerl., vol. 3, no. 3, p. 5, 1857-58.
(Japan). — Günther, Cat. Fish.
Brit. Mus., vol. 2, p. 347, 1860
— ^{Martens} Preuss. Exped. Ost Asien, vol. 1, p. 390, 1876 (Yedo;
(copied) — Bleeker, Verh. Yokohama.

Akad. Wet. Amsterdam, ser. 2, vol.
18, p. 2, 1879 (China). — Peters,
Monatsh. Akad. Wiss. Berlin, p.
922, 1880 (Kingpo). — Károli,
Termesz. Füzetek, Budapest, vol.
5, p. 160, 1880 (Canton, Rugged Island).

vol. 21, 1903 (1904), p. 154 (Teram).

{? Cynoglossus gryphota Richardson, Ichth.
(China Japan), 1846, p. 225. Canton.

Depth $3\frac{3}{5}$; head $3\frac{1}{3}$, width $1\frac{1}{2}$. Snout
 $3\frac{1}{8}$ in head; eye 4 to $5\frac{1}{2}$, $1\frac{1}{2}$ to 2 in snout,
 $1\frac{1}{3}$ in interorbital; maxillary reaches
opposite eye center, length $2\frac{4}{5}$ in head;
3 small open pores across snout, 5 much
larger ones along free edge of skin of
snout and well developed lateral lobe;
1 central and 2 lateral orifices below
mandibular symphysis; upper jaw
somewhat longer; teeth villiform, outer
upper row slightly enlarged and inner
similar in lower jaw; interorbital nearly
flat; preopercle serrate, serrae most

— Klunzinger, Fische Roth. Meer.,
vol. 1, p. 120, 1884 (diagnosis in
key). — Rutter, Proc. Acad. Nat.
Sci. Philadelphia, p. 72, 1897
(Swatow).

— Jordan and Snyder, Annals Zool.
Japon., vol. 3, p. 65, 1901 (reference).
— Jordan and Evermann, Proc. U.
S. Nat. Mus., vol. 25, p. 335, 1902
(Formosa; Hokkaido). — Jordan and
Richardson, Mem. Carnegie Mus.,
vol. 4, no. 4, p. 180, Aug. 28, 1909
(Hokkaido record). — Snyder,
Proc. U. S. Nat. Mus., vol. 42, p. 411,
1912 (Tokyo; Kagoshima).

Sciaena cötör bay, Fishes of India, pt. 2, 1876, p. 181, pl. 46, fig. 3 (Irrawaddi).

— Vinciguerra, Ann. Mus. Civico Stor. Nat. Genova, 1882 - 83. (February 3, 1883), p. 652 (Minla on the Irrawaddi, Burma). — Das, Anna British India, vol. 2, 1889, p. 115, fig. 49. — Tiran, Service décanogr. Tech. Indo Chine, 1929, note 6, p. 169 (Cochina China).

Corvina malla-batchelée Richardson, Ichth. China Japan, 1846, p. 226. Canton; China Sea.

Sciaena (Corvina) nasus Steindachner, Verhandl. zool. bot. Gesell. Wien, vol. 16, 1866, p. 771, pl. 15, fig. 1. Calcutta.

Corvina furcata (not Lacépède) Schmett, Cat. Mus. Godeffroy, Ha. 4, 1879, p. 16 (Saigon); no. 7, 1879, p. 44 (Saigon). — Duncker, Mitteil. Naturh. Mus. Hamburg,

— Jordan and Seitz, Mem. Carnegie Mus., vol. 6, no. 1, p. 27, June 1913 (Chinampo, Fusan; Chemulpo); — Jordan and Thompson, Mem. Carnegie Mus., vol. 6, no. 4, p. 240, Sep. 1914 (Misaki).

— Izuka and Matsuura, Cat. Zool. Spec. Tokyo Mus., Vertebr., p. 160, 1920 (Tokushima, Awa).

— Jordan and Hubbs, Mem. Carnegie Mus., vol. 10, no. 2, p. 222, June 27, 1925 (Tokyo, Toyama, Fukuoka, Foo). — Sowerby, Natural. in Manchuria, vol. 4, p. 200, pl. 26, 1930 (Pei tai Ho; Chin wang Yao; Dalny; Antung; Tientsin). — Anonymous, Illustrat. Jap. Aquat. Animals, vol. 1, pl. 27, fig. 6, 1931. — Heire, Hong Kong Naturalist, Suppl. no. 3, p. 28, Feb. 1934 (Hong Kong). *Trichiurus japonicus mystrom*, Bih. Kon. Svensk. Vet. Akad. Handl., vol. 13, afd. 4, no. 4, p. 30, 1887 (Hagasaki) (error).

Trichurus lepturus (not
Linnaeus) Bleeker, Verh. Batavia.
Genoot. (Hal. Ichth. Japan), vol.
25, 1853, p. 14 (reference). —
Günther, Rep. Voy. Challenger, vol. 1,
pt. 6, p. 66, 1880 (-off Iwojima in
345 fathoms).

or obtusely triangular premaxillary groove scaleless; 3 rows on cheeks. Scales with 8 or 9 basal radiating striae; circuli basal, very fine parallel transverse striae.

D. X, 9, I, second spine $1\frac{1}{2}$ to $1\frac{2}{3}$ in head, first ray $2\frac{1}{8}$ to $2\frac{1}{5}$; A. III, 7, I, second spine $1\frac{2}{5}$, third spine $2\frac{1}{4}$, first ray 2 to $2\frac{1}{10}$; least depth of caudal peduncle $2\frac{1}{2}$ to $2\frac{3}{5}$; ventral $1\frac{2}{5}$; caudal 3 in combined head and body to caudal base; pectoral $2\frac{4}{5}$ to 3.

Back drab or brown, sides and below white, everywhere with silvery white reflections. Iris bright silvery white. Snout brown, also front of upper lip. Fins pale or whitish. Dorsals dusky marginally, blackish on spinous fin and each membrane subbasally with dusky spot just below basal scaly sheaths.

Trichurus haemela (not Forskaal)
Jordan and Richardson, Mem. Carnegie
Mus., vol. 4, no. 4, p. 180, Aug. 28, 1909
(~~Hobolo~~ Takao, Formosa). — Fowler,
Proc. Acad. Nat. Sci. Philadelphia,
vol. 81, p. 596, 1929 (Shanghai), p. 604
(Hong Kong).

Depth $18\frac{1}{5}$ to $18\frac{4}{5}$; head 8 to $8\frac{2}{3}$,
 $2\frac{1}{2}$ to 3 to vent, trunk $2\frac{1}{2}$ to
 $3\frac{1}{3}$ in tail; head width $5\frac{1}{5}$ to
 $5\frac{1}{4}$ in its length. Snout 3 in
head; eye $5\frac{1}{5}$ to $5\frac{1}{4}$, $1\frac{3}{4}$ to $1\frac{7}{8}$
in snout, greatly exceeds
interorbital; maxillary reaches
 $\frac{1}{8}$ in eye, length $2\frac{3}{4}$ in head
from snout tip; 3 large upper
front canines followed by 10 or
11 smaller compressed teeth each
side; pair of small lower front
canines, followed by 10 to 12 teeth
each side, median largest or
larger than front canines;
interorbital 7 to $7\frac{1}{4}$, concave.

No scales. Lateral line
greatly decurved behind
depressed pectoral, falls to
lower fourth in trunk and

Follow - Incl Caps
Searched

~~No diff's~~

Family Sillaginidae L., 12/12

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Body long, rather slender or tapering from spinous dorsal forward and backward, little or slightly compressed. Head elongate, with conic contour and forehead depressed. Eyes lateral or directed little upward, nearly median. Mouth small, terminal, cleft, short. Premaxillaries protractile. Teeth small, in jaws and on front of vomer, none on palatines. Preopercle entire or crenulated, bent to cover under surface of head. Opercle small, with short spine. Gill opening wide. Pseudobranchiae present. Branchiostegals 6. Stomach coscal. Pyloric appendages few. Air bladder simple. Skull with mucous cavities. Vertebrae 34 to 43, of which 22 to 27 caudal. Scales small, ctenoid. Lateral line complete to caudal base or little beyond, nearly straight. Dorsals 2, first short and second with long base. Anal with 1 or 2 small spines, like soft dorsal. Caudal emarginate, lobes rounded. Pectorals normal. Ventrals with spine and 5 rays, thoracic, nearly scaleless.

Shore fishes of small or moderate size, living in the Indo-Pacific and valued as food. In several respects they approach the Sciaenidae. The rather few species were listed and their generic divisions best determined by Gill in 1861. These results, with slight modification, are followed in the present work.

Analysis of genera

a¹. Sillaginiæ. Snout conic; teeth uniformly small; dorsal spines 10 to 12, moderate.

b¹. Scales moderately small, 50 to 80; dorsal spines 10 or 11; soft dorsal and anal subequal

b². Scales very small, about 170; dorsal spines 12; soft dorsal much longer than anal

a². Sillaginopsinae. Snout depressed; outer teeth in front enlarged; scales small, about 90; dorsal spines 9, second elongated

Sillago

Sillaginodes

Sillaginopsis

tail depth.

D. 160 to 168, fin height $2\frac{2}{3}$ in total head; A. 100 to 107?, as imperfect, low, spinous reticulations; pectoral rays I, 12, fin $3\frac{2}{3}$ in total head length.

Largely silvery white. Dorsal more or less dark gray above, at least anteriorly; pale or whitish basally. Pectoral pale. Iris white.

China, Japan. Apparently differs from Trichiurus haemula in the greatly larger eye, usually less than 2 in snout. The details as given by Günther in 1860 in his description of Trichiurus japonicus are certainly not specific characters. Its interorbital is slightly

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Analysis of species

H a¹. Sillago. □ Ventral spine normally slender, bony.

□ b¹. Anal with 1 or 2 spines; rays 19 to 23.

□ c¹. Cheek and interocular scales cycloid.

□ d¹. Scales large, 50 to 55 along lateral line. *macrolepis*

□ d². Scales moderate, 70 to 75 along lateral line.

M e¹. Scales 4 above lateral line; dorsal rays 26 or 21, anal 22 or 23.

f¹. Eye 4 to 5 in head.

f². Eye 7 in head.

M e². Scales 5 or 6 above lateral line; dorsal rays 22, anal 19 or 21.

6cm f¹. Body immaculate; dorsal spotted between rays. *bassensis*

6cm g². Body spotted; first dorsal brownish above, dotted below; second dorsal edged brown and with 2 longitudinal vittae; caudal with 3 transverse orange vittae. *maculata*

J c². Cheek and interocular scales ctenoid.

7cm h¹. Scales 70 to 75 in lateral line; 3 rows above. *japonica*

7cm h². Scales 82 to 86 in lateral line; 7 rows above. *parvisquamis*

□ b². Anal spines 2, rays 15 or 16 (rarely 18); first dorsal marbled blackish, second with 4 or 5 rows of oblong spots. *ciliata*

concave as in Trichiurus haumela.

U. S. N. M., No. 45219. Japan.

P. L. Joway. Length 764 mm.

U. S. N. M., No. 45220. Japan.

P. L. Joway. Length 815 mm.

U. S. N. M., No. 49412. Tokio market. K. Otakei. Length 1004 mm.

U. S. N. M., No. 49413. Tokio market. K. Otakei. Length 1110 mm.

U. S. N. M., No. 71317. Tokio market. Albatross Collection.

Length 515 mm. Eye $2\frac{1}{4}$ in snout.
End of tail regenerated.

U. S. N. M., No. 85859. China.

Sowerby. Length 187 to 222 mm.
Two examples.

U. S. N. M., No. ⁸⁶⁰¹⁰~~87061~~. China.
Sowerby. Length 234 to 242 mm.
Two examples. As Trichiurus lajor.

Genus Sillago Cuvier 130 W

134789 762

Sillago CUVIER, R^egne Animal, vol. 2, 1817, p. 258. (Type, Sillago acuta)

(U CUVIER, designated by GILL, Proc. Acad. Nat. Sci. Philadelphia, 1861, p. 503.)

(Silago SWAINSON, Nat. Hist. Animals, vol. 2, 1839, p. 205. (Type, Sillago acuta CUVIER.)

Body long, slender, little compressed, rounded above to level below. Head conic, elongate, compressed, gradually narrowed forward. Eyes moderate or large, nearly median. Mouth small, jaws nearly even or lower shorter. Teeth villiform. Scales 50 to 90 in lateral line. First dorsal slopes down backward, spines 11 or 12, rays 17 to 23. Anal with 2 slender spines, nearly long as second dorsal, rays 15 to 23. Caudal emarginate. Ventral spine sometimes cartilaginous.

Sillago is now restricted to the species having similar forms, scales of moderate size, and nearly equal dorsal and anal fins; and it consequently excludes some species that have been referred to it by previous naturalists, the Sillagopunctatus being taken as the type of one, and S. domina as that of another genus. Even in the genus as now restricted, there are more considerable variations than are often found in the same genus. While the ventral spine is slender and, as usual, osseous in most species, it is in one thick and cartilaginous. Again, some species have cycloid scales in the cheek and forehead, while others have ctenoid. The preoperculum is almost entire in some, while in others it is ciliated. As these differences do not, however, appear to be supported by others, they perhaps can scarcely be regarded as generic, and the species so distinguished have been therefore retained in the same genus. (Gill.)

U. S. N. M., No. 87061. Foochow.
Sowerby. Length 137 to 230 mm.
Seven examples.

U. S. N. M., No. 87062. Foochow:
Sowerby. Length 320 mm.
W.

Follow Incl Cape

134789

764

Sillaginopodus, new subgenus. Ventral spine expanded as thick cartilaginous pad, joined with first ventral ray - *Hondropus*.

Subgenus Sillago Cuvier c. 120 ✓

Ventral spine normal, slender bony.

Sillago macrolepis Bleeker c. 127

Sillago macrolepis BLEEKER, Nat. Tijds. Nederland. Indië, vol. 17, 1858-1859, p. 166 (Batavia; Bodeling, Bali). - GILL, Proc. Acad. Nat. Sci. Philadelphia, 1861, p. 504 (compiled). - GÜNTHER, Cat. Fish. Brit. Mus., vol. 2, 1861, p. 246 (compiled). - BLEEKER, Verh. Kon. Akad. Wet. Amsterdam, vol. 14, 1874, p. 72 (Java; Bali); Atlas Ichth. Ind. Nederland., vol. 9, 1877, pl. (1)389, fig. 1. - MEYER, Anal. Soc. Espan. Hist. Nat. Madrid, vol. 14, 1885, p. 28 (Manado, Celebes). - BEAUFORT, Bijdr. Dierk., Amsterdam, vol. 19, 1913, p. 120 (Saonek, Waigiu; Ambon). - FOWLER, Mem. Bishop Mus., vol. 10, 1928, p. 235 (copied GÜNTHER).

Sillago maculata (not QUOY and GAIMARD) SEALE and BEAN, Proc. U.S. Nat. Mus., vol. 33, 1907, p. 245 (Zamboanga). (Misprint.)

fall 1911
Depth $4\frac{1}{2}$; head $3\frac{1}{5}$, width $1\frac{7}{8}$. Snout $2\frac{1}{2}$ in head; eye $3\frac{2}{3}$ in snout, greater than interorbital; maxillary reaches $1\frac{2}{5}$ in snout, length $3\frac{7}{8}$ in head; teeth fine, villiform, in bands in jaws and on vomer; interorbital $4\frac{1}{2}$ in head, nearly level or only slightly depressed; preopercle edge entire.

Gill rakers $4+9$, lanceolate, $1\frac{3}{4}$ in gill filaments, which $2\frac{1}{2}$ in eye.

Trichinurus coxi, Ogilby

Trichinurus coxi Ramsay and Ogilby,
Proc. Linn. Soc. New South Wales, ~~vol.~~
ser. 2, vol. 2nd ~~September~~ 28, 1887, p.
(562) type locality, Broken Bay,
New South Wales).

Trichinurus coxi McCulloch, mem.
Austral. Mus., ~~vol.~~ 5, pt. 2, ~~September~~
~~10, 1929~~ (p. 268) (reference).

Cat²⁹ *Yerres setifer* (Buchanan-Hamilton)

Chanda? *setifer* Buchanan-Hamilton, Fishes
of Ganges, 1823, pp. 105, 370. (Ganges)
estuaries.

Yerres setifer Day, Fishes of India, pt. I,
1875, p. 97 text figure (copied Buchanan-
Hamilton), pl. 25, fig. 1 (Hooghly at
Calcutta). $\frac{1}{m}$ Günther, Introduct. Study
of Fishes, 1880, p. 388, fig. 159. $\frac{1}{m}$ Day,
Fishes of India, Suppl., 1888, p. 786;
Fauna British India, vol. 2, 1889, p. 536.

Yerres altspinis Günther, Cat. Fishes
Brit. Mus., vol. 4, 1862, p. 58. Ganges River.

Depth 2; head $3\frac{1}{5}$. Snout $3\frac{2}{3}$ in head;
eye $3\frac{2}{3}$, equals snout or interorbital;
maxillary reaches eye, length $3\frac{1}{4}$ in head;
interorbital low, lower preopercle edge
serrated on posterior half.

Teeth 38 in lateral line; 5 above,
10 below; premaxillary groove scaleless.

559

Depth $15\frac{2}{3}$ to $15\frac{3}{4}$; head $7\frac{2}{5}$, $2\frac{1}{8}$ to vent, $2\frac{1}{5}$ to $2\frac{1}{2}$ in tail, width $5\frac{1}{2}$ to $6\frac{1}{4}$ in its length. Snout $2\frac{2}{3}$ in head from snout tip; eye $7\frac{1}{5}$ to 8, $2\frac{3}{4}$ to $3\frac{1}{6}$ in snout, 1 to $1\frac{1}{8}$ in interorbital; maxillary reaches $\frac{1}{8}$ to $\frac{1}{2}$ in eye, length $2\frac{1}{2}$ in head from snout tip; 3 to 5 upper front canines, large, followed by 9 or 10 each side; pair of small, lower, front canines, well inclined back, followed by 9 or 10 each side below; interorbital 7 to $7\frac{1}{2}$, low, depressed concavely; mandible $1\frac{9}{10}$ in total head length. Gill rakers 9 or 10 + 18, slender denticles, $\frac{1}{3}$ of gill filaments, which 2 in eye.

No scales. Lateral line falls behind depressed pectoral to lowest fourth of body depth.

134789 755

D. XI, 26, I or 27, I, second spine $2\frac{1}{3}$ to $2\frac{1}{5}$ in head, first ray $2\frac{1}{4}$ to $2\frac{2}{5}$; A. II, 7, I, second spine $2\frac{1}{3}$ to $2\frac{2}{5}$, first ray $1\frac{3}{4}$ to $1\frac{7}{8}$; caudal $1\frac{1}{10}$ to $1\frac{1}{8}$, emarginate; least depth of caudal peduncle 3 to $3\frac{1}{4}$; pectoral $1\frac{1}{2}$ to $1\frac{3}{5}$; ventral $1\frac{2}{5}$ to $1\frac{1}{2}$.

Light brown generally, little paler below, back and head above dusky brown. Opercle largely dusky. Iris slate. Barbel pale or whitish. Spinous dorsal largely blackish terminally. Soft vertical fins with gray on outer portions. Paired fins whitish.

India, Ceylon, Malayan Peninsula, East Indies, Philippines, Indo China, Amoy.

D. 5461. # Caringo Island (W.), N. 12° (W., 4.9 miles ($13^{\circ} 57' 42''$ N., $123^{\circ} 06' 42''$ E.). June 14, 1909. Length, 115 to 138 mm. 15 examples.

19759 [1526]. # Manila market. April 20, 1909. Length, 178 mm.

17549. # Sorsogon market. March 12, 1909. Length, 171 mm.

11830. # Sandakan market, Borneo. March 2, 1908. Length, 104 mm.

56210 U.S.N.M. # San Fabian, Philippines. Bureau of Fisheries (3268). Length 123 mm.

Sciaena macroptera (Bleeker)

Umbrina macropterus BLEEKER, Nat. Tijds. Nederland. Indië, vol. 4, 1853,

p. 254, # Priamei, Sumatra.

Umbrina macroptera GUNTHER, Cat. Fish. Brit. Mus., vol. 2, 1860, p. 279

(compiled) - DAY, Fishes of India, pt. 2, 1876, p. 182 (Madras);

Fauna Brit. India, Fishes, vol. 2, 1889, p. 108 (Madras). - JORDAN and

STARKS, Ann. Carnegie Mus., vol. 11, 1917, p. 454 (Ceylon). - BARNARD,

Ann. South Afric. Mus., vol. 21, pt. 2, 1927, p. 581 (Natal).

560

L. 140 to 148, fin height $2\frac{4}{5}$
in total head length, origin over
hind preopercle edge; d. spines
above C, low, inconspicuous, very
short points; pectoral $3\frac{2}{3}$ in
total head length, rays 9 or
10.

Silvery. Dorsal gray marginally,
with obscure gray black blotch
anteriorly, basally pale or whitish.
Pectoral gray or brown. Iris
silvery white. Inside mouth
and gill opening dark gray.

Though known only from
New South Wales the characters
of this species have not been
contrasted with its nearest ally
or Gymnophorus haematocephalus, from
which it is scarcely distinguished.

No diplo

Follow-Incl Caps
Scribbed

724

134789 756

Sciaena macropterus BLEEKER, Verh. Kon. Akad. Wet. Amsterdam, No. 3,
Ind. Neerland.,
vol. 14, 1874, p. 30 (Sumatra; Nias); Atlas Ichth., vol. 9, 1877,
pl. (1)384, fig. 5, 1877.

Sciaena macroptera FOWLER, Journ. Acad. Nat. Sci. Philadelphia, ser. 2,
vol. 12, 1904, p. 530 (Padang). - FOWLER and BEAN, Proc. U.S. Nat.
Mus., vol. 33, 1923, p. 18 (Sumatra). - FOWLER, Journ. Bombay Nat.
Hist. Soc., vol. 25, 1925, p. 320 (Bombay).

Johnius macropterus FOWLER, Proc. Acad. Nat. Sci. Philadelphia, 1929
(1930), p. 652 (Padang specimen). (Error.)

Depth $3\frac{1}{3}$ to $3\frac{2}{3}$; head $3\frac{3}{5}$ to $3\frac{2}{3}$, width $1\frac{3}{5}$ to $1\frac{4}{5}$. Snout
 $3\frac{1}{3}$ to $3\frac{1}{2}$ in head; eye $4\frac{1}{2}$ to 5, $1\frac{1}{2}$ in snout, $1\frac{1}{4}$ in interorbital;
maxillary reaches $\frac{1}{2}$ to $\frac{2}{3}$ in eye, expansion 2 in eye, length $2\frac{1}{8}$ to $2\frac{1}{2}$
series,
in head; bands of fine teeth in jaws, in 4 or 5 irregular/short mandibular
barbel $5\frac{1}{2}$ to 6 in eye; outer upper row scarcely enlarged; interorbital 3
to $3\frac{3}{4}$ in head, broadly convex. Gill rakers 5 + 7 or 8 short points, $\frac{1}{3}$
to $\frac{1}{2}$ of gill filaments, which $\frac{1}{3}$ of eye.

Scales 43 to 45 in lateral line to caudal base and 18 to 20 more
out over caudal medianly; 4 above, 7 or 8 below, 26 or 27 predorsal. Scales
with 7 to 11 basal radiating striae; 31 to 65 short apical denticles, with 5/
18 transverse series of basal elements; circuli fine.

D. X, I, 31, I, third spine 2 to $2\frac{3}{5}$ in head, third ray $2\frac{1}{8}$ to
 $2\frac{4}{5}$; A. II, 7, I, second spine $2\frac{2}{5}$ to $2\frac{7}{8}$, second ray $1\frac{3}{4}$ to 2; least dep
of caudal peduncle 3 to $3\frac{2}{3}$; pectoral $1\frac{1}{4}$ to $1\frac{2}{5}$; ventral $1\frac{2}{5}$ to $1\frac{2}{3}$;
caudal 3 to $4\frac{3}{4}$ in rest of body.

Back dark brown, also sides below and on under surfaces whitish with
silvery white reflections. Iris pale yellowish white. Vertical fins dusted
with dull drab or dusky, spinous dorsal darkest. Barbel and chin whitish.
Pectoral pale brownish above, whitish below. Ventrals white.
Natal, India, Ceylon, East Indies.

A. S. I. M., No. 47924. Broken Bay,
New South Wales. (Australian Museum).
Length 1040 mm.

A. S. I. M., No. 47925. Broken Bay,
New South Wales. (Australian Museum).
Length 1220 mm.

nearly opposite the hind eye edge.
→ Whitley in re-describing and
figuring the holotype of Gerrus splendens
shows a fish certainly very close, if
not identical with the present species.
Though its first dorsal ray is broken
the dotted line of the figure indicates
it is subequal with the last dorsal
spine.

My materials differ from Klunzinger's
figure in that they clearly show 3 rows
of scales on the cheek, with a fourth
row on the preopercle flange; the
scaleless premaxillary groove is greatly
shorter than in his figure of the top of
the head; they agree, however, in that the
axillary ventral scale is $\frac{3}{5}$ fin length.

Trichiurus savala Cuvier

Trichiurus savala Cuvier, Hist.

Nat. Poiss., vol. 8, (1831), p. 184,
pl. 224, (type locality, Pondicherry).

Régne Animal, ed. 2, vol. 2, p.
219, - April 1829 (type locality,
"mer des Indes");

— Cantor, Journ. Asiatic Soc.
Bengal, vol. 18, pt. 2, p. 107, 1849.
(1850) (Penang Sea; Malacca (Penin-
sula); Singapore).

~~*Xystaema raffi*~~ *Yerres raffi* (Barnard).

~~*Xystaema raffi* Barnard~~, ^{Ann.} South African Mus., vol. 21, pt. 2, 1917, p. 630, fig. 21 (lower pharyngeal teeth) (in Günther). *Yerres longirostris* (not *Labrus longirostris* Lacépède 1803) (~~Raffi~~) Günther, Proc. Zool. Soc. London, 1861, p. 142, pl. 24. Cape of Good Hope; Cat. Fishes Brit. Mus., vol. 4, 1862, p. 253 (copied). In Regan, Ann. Natal Govt. Mus., 1908, p. 245 (Kosi Bay). In Gilchrist and Thompson, Ann. South African Mus., vol. 6, 1908-11, p. 158 (Natal; Durban Harbour); Ann. Durban Mus., vol. 1, pt. 4, 1917, p. 352 (compiled). In Fowler, Proc. Acad. Nat. Sci. Philadelphia, 1925, p. 244 (Natal).

Depth $2\frac{1}{4}$; head $3\frac{1}{3}$, width 2. Snout $3\frac{2}{5}$ in head; eye $\frac{2}{5}$, equals snout, $1\frac{1}{3}$ in interorbital; maxillary reaches opposite front eye edge, expansion $\frac{1}{3}$ of

— Bleeker, Nat. Tijds. Ned. Indie, vol. 1, (1850), p. 160, (Banka); vol. 2, (1851), p. 476 (Río ^{Blauw, niet geynde en meer} vol. 3, 1852, p. 53¹⁸⁵²) (Singapore), p. 445 (Banka); Verh. Batavia. Genoot. (makreel), vol. 24, 1852, p. 41, (Batavia); Nat. Tijds. Ned. Indie, vol. 7, 1854, p. 312, (Bantem); vol. 9, ¹⁸⁵⁵ p. 394 (North Pasuruan); Act. Soc. Sci. Ind. Néerl., vol. 2, no. 6, 1857, p. 3, (Kahajan and Barito River, Bandjermasin, Borneo); vol. 3, no. 6, 1857-58, p. 2, (Sinkawang, Borneo); Nat. Tijds. Ned. Indie, vol. 16, 1858, p. 317, (Tanara), p. 434 (Pamangkat); vol. 17, 1858-59, p. 143, Boleling, Bali; Act. Soc. Sci. Ind. Néerl., vol. 5, no. 7, 1858-59, p. 2 (Sinkawang, Borneo); Nat. Tijds. Ned. Indie,

Iris silvery white. Lips pale or whitish. Dorsals pale or whitish, terminally spinous membranes dusky to even blackish; on each membrane basally pale brown blotch, at least concealed by basal scaly sheaths. Anal pale, some brown dots on anterior membranes. Fins otherwise pale to whitish, especially terminal edges of ventrals.

Known only from the Philippines ^{previously} ~~and not a synonym of *Gerres philippinus* Günther, as I stated in 1927.~~
from the following specimens:

(Known)

2 examples. Port San Vicente, Luzon.
November 18, 1908. Length 181 to 221 mm.

55913 U.S.N.M. Bacon, Sorsogon, Luzon.

Bureau of Fisheries (3116). C.J. Pearson.
Length 180 mm. Type of *Xystaema baconensis*.

6276 U.S.N.M. Bonin Islands.

Capt. William Stimpson. Length 190 mm.

vol. 19, 1859, p. 435 (Sumbawa);
 vol. 21, 1860, p. 138 (Muntok, Banks);
 } Verslag. Akad. Wet. Amsterdam,
 vol. 12, 1861, p. 64 (Penang).

{ — Sünther, Cat. Fis., K. im. Acad., vol. 2,
 p. 347, 1860 (type of Trichiurus armatus,
 China; Malay Peninsula). — Bleeker,

— Day, Fishes of Malabar, p. 67, 1865;
 Fishes of India, pt. 2, p. 201, pl.
 47, fig. 4, 1876 (Bombay). — Martens,
 Preuss. Exped. Ostasien, vol. 1, p. 390, 1876
 (Manila). — Károlyi, Termesz. Füzetek, Budapest,
 vol. 5, p. 160, 1881 (Singapore).

— Klunzinger, Fische Roth. Meers, vol. 1,
 p. 120, 1884 (diagnosis in key). —
Day, Fauna British India, Fishes,
 vol. 2, p. 135, fig. 53, 1889.

Eucinostomus japonicus Jordan and Snyder,
Annot. Zool. Japon., vol. 3, 1901, p. 81
(Nagasaki).

Gerronemorpha japonica Jordan, Proc. U. S.
Nat. Mus., vol. 32, 1907, p. 247, fig. 2 (Naha,
Riu Kiu; Wakamara).

Depth $2\frac{1}{2}$ to $2\frac{2}{3}$; head $3\frac{1}{8}$ to $3\frac{1}{2}$, width 2. Snout $3\frac{1}{5}$ to 4 in head; eye $2\frac{3}{4}$ to $3\frac{1}{4}$, greater than snout in young to subequal with age, greater than interorbital in young to $1\frac{1}{4}$ with age; maxillary reaches $\frac{1}{8}$ in eye, expansion 3 to $3\frac{1}{2}$ in eye, length $2\frac{7}{8}$ to 3 in head; interorbital $2\frac{3}{5}$ to 3, broadly convex. Gill rakers 6+7, short points, $\frac{1}{2}$ of gill filaments which $2\frac{1}{3}$ in eye.

Scales 41 or 42 in lateral line to caudal base and 3 or 4 more on latter; 6 above, 9 below, 18 or 19 predorsal forward opposite front eye edge, with broad

— Fowler, Proc. Acad. Nat. Sci.
Philadelphia, 1904, p. 770 (Singapore).

— Fowler, Journ. Bombay Nat. Hist. Soc., October 20, 1927, p. 257 (Bombay); vol. 33, no. 1, September 30, 1928, p. 109 (Bombay). — McCulloch, Austral. Mus. Mem., no. 5, pt. 2, p. 268, September 10, 1929 (reference).

1023

Crest 29 Gerreomorpha japonica (Bleeker)

Gerres japonicus Bleeker, Naturk. Tijdschr.
Nederland. Indie, vol. 6, 1854, p. 404. Nagasaki;
Verhandel. Batavia. Grootsch. Japan.,
vol. 26, 1857, p. 93, pl. 5 fig. 2 (Nagasaki);
Act. Soc. Sci. Ind. Néerland., (no. 3) vol.
3, 1857-58, p. 3 (Kioscio), p. 5 (Japan).
+ Günther, Cat. Fishes Brit. Mus., vol. 1, 1859,
p. 351 (China); vol. 4, 1862, p. 260 (Amoy and
China). + Sauvage, Bull. Soc. Philomat.,
Paris, series 7, vol. 5, 1881, p. 105 (Swatow, China).
+ Elera, Cat. Fauna Filip., vol. 1, 1895, p.
476 (Luzon, Cavite, Santa Cruz). + Rutter,
Proc. Acad. Nat. Sci. Philadelphia, 1897, p.
76 (Swatow). + Izuka and Matsuura,
Cat. Zool. Spec. Tokyo Mus. Vertebrata, 1920,
p. 148 (Tateyama, Bonin).

Diapterus japonicus Bleeker, Nederland.
Tijdschr. Dierk., vol. 2, 1865, p. 56
(Amoy).

Enchelyopus sawala Bleeker,
 Verslag Akad. Wet. Amsterdam,
 ser. 2, vol. 2, 1868, p. 291 (Río,
 Bintang).

Trichiurus armatus Gray, Zool.
 Miscellany, ^{vol. 1, February} 1831, p. 9 (type locality,
 India); Illustrat. Indian Zool.,
 vol. 2, pl. 93, fig. 1, 1833-34.

— Richardson, Ichth. China and
 Japan, p. 268, 1846 (China Sea).
 — Griffith, Animal Kingd. Cuvier,
 Fishes, p. 349, pl. 6, fig. 1, 1834.

Trichiurus lepturus (not Linnaeus)
 Basilewsky, Proc. Mem. Soc. Nat. Moscow,
 vol. 10, p. 224, 1855 ("in foris
 (Pekinensisibus").

Analysis of the species (pt 2)
C. H.

- a.¹ Cheeks with 3 rows of scales.
- b.¹ Lower preopercle edge entire; tip of spinous dorsal black. *japonica*.
- b.² Lower preopercle edge serrated on posterior half; upper edge of spinous dorsal narrowly black. *setifera*.
- a.³ Cheeks with more than 3 rows of scales; preopercle edge entire; tips of spinous dorsal and caudal black. *rostrata*.

Cat 3
name only

361

Depth $2\frac{1}{4}$; head 8, width $5\frac{3}{5}$, combined head and trunk $3\frac{3}{4}$ in tail. Snout $2\frac{3}{5}$ in head from snout tip; eye 7, $2\frac{1}{2}$ to 3 in snout, greater than interorbital; maxillary reaches $\frac{1}{3}$ in eye, length $2\frac{1}{3}$ in head from snout tip; interorbital $8\frac{1}{5}$, depressed concavely. Gill rakers 5+9, short, very slender, $\frac{2}{5}$ of gill filaments or 4 in eye.

Skin smooth. Lateral line slopes down to lower fourth in body depth at anal origin.

D. 115, begins midway between hind eye edge and pectoral origin, last $\frac{2}{5}$ of tail free of rays, fin height $2\frac{1}{2}$ in total head length; A. 67, first spine equals eye, all others short,

no dathsLeaded
Follow-Incl Caps

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675

Depth 5 in total; head $4\frac{1}{2}$, eye 4 in head, greater than interorbital; mouth moderately oblique, jaws equal, maxillary $2\frac{1}{4}$ to $2\frac{1}{3}$ in head; teeth in bands in jaws, outer upper and inner lower row enlarged, no canines; preopercle denticulate.

Scales 55 in lateral line to caudal base; 75 along above lateral line; 8 or 9 above lateral line to spinous dorsal.

D. XI, 27, spines slender, fourth longest and less twice body depth, soft fin with low basal petaly sheath; A. II, 7 or 8; caudal $5\frac{1}{4}$ in body; pectoral acute, $6\frac{3}{5}$ in body.

Bluish green above, silvery below. Iris yellow. Fins yellow, membranes brownish gray. Length 270 mm. (Bleeker.)

China. Perhaps not distinct from Johnius plagiostomus, the imperfect description hardly permitting identification.

Sciaena distincta Tanaka (Dobuts. Zasshi, Tokyo, vol. 23, 1916,
pp. 26-27) and Sciaena aurea Tanaka (Dobuts. Zasshi, Tokyo, vol. 23, 1916,
pp. 27-28) both from Japan, I have been unable to consult.

Besides the little known species I have arranged the following tentative key to include the established species of this genus in the Indo-Pacific.

Analysis of species

Sc. 6

a¹. Tubular scales in lateral line 43 to 53.

b¹. Dorsal rays 22 to 26.

c¹. Depth of body 3 to $\frac{1}{2}$.

d¹. Dorsal rays 22 or 23.

e¹. Lower gill rakers 7; scales 52 in lateral line.

#goma

e². Lower gill rakers 9; scales 41 to 43 in lateral line.

#diacanthus

1568

though distinct; pectoral $2\frac{7}{8}$ in
head; no ventral.

Pale brown, with leaden to
silvery reflections or whitish
below. Iris gray. Fins whitish.

A. N. S. P., one example. Bombay.
Dr. F. Hallberg. 1925. Purchased.
Length 305 mm.

A. N. S. P., one example. Bombay.
Dr. F. Hallberg. 1925. Purchased.
Length 465 mm.

134789

683

Johnius ~~diacanthus~~ (Lacepède) 1802, p. 127 or*Lutjanus diacanthus* LACEPÈDE, Hist. Nat. Poiss., vol. 4, 1802, pp. 195,1802
240, ("La collection hollandaise cédée à France"). (No locality.)*Johnius diacanthus* CANTOR, Journ. Anat. Soc. Bengal, vol. 18, pt. 2,

1849, p. 1049, (Pinang, Malay Peninsula, Singapore). MASON, Burmah

Nat. Resources, 1860, p. 63. - KNER, Reise Novara, Fische, 1865,

1865
p. 133 (Madras and 50 miles off Ceylon). - FOWLER, Journ. Bombay Nat.

Hist. Soc., vol. 30, no. 4, Nov. (1926), p. 777 (Bombay); vol. 33, no.

1, 1928, p. 115 (Bombay); Proc. Acad. Nat. Sci. Philadelphia, 1929

(1930), p. 596 (Shanghai), p. 611 (Hong Kong).

Sciaena diacanthus GÖNTHER, Cat. Fish. Brit. Mus., vol. 2, (1860, p. 290)1860
240 (China, Bay of Bengal, Malayan Peninsula, Calcutta). - DAY, Proc.

Zool. Soc. London, 1865, p. 18 (Cochin, Malabar); Fishes of India, pt.

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locality).

Trichiurus acutirostris Günther,
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in text).

Trichiurus cristatus Klunzinger,
Fische Roth. Meer., 1884, p. 120, pl.
13, fig. 5 (type locality, ¹²¹
Koseir, Red Sea).

D. X, 10, I spine $1\frac{2}{3}$ in head;
A. III, 7, second and third spines
subequal or second $2\frac{1}{8}$ in head;
caudal slightly longer than head,
deeply emarginate; least depth of
caudal peduncle $2\frac{1}{8}$ in head; ventral
 $1\frac{1}{4}$; pectoral $2\frac{3}{4}$ in combined head
and body to caudal base.

Silvery. Narrow dark edge to
dorsal interspinous membrane and
brown spot at middle of each dorsal
ray just above sheath. Length 100 mm.
(May.)

Houghly River at Calcutta, India.

(572)

Depth 14 to $15\frac{1}{3}$; head $7\frac{3}{4}$ to $8\frac{4}{5}$, width 5 to $5\frac{3}{4}$; combined head and trunk $3\frac{1}{3}$ to $3\frac{3}{5}$ in tail. Snout $2\frac{1}{2}$ to $2\frac{3}{4}$ in head from snout tip; eye 6 to $6\frac{1}{4}$, $2\frac{1}{8}$ to $2\frac{2}{5}$ in snout, greater than interorbital; maxillary reaches eye, length $2\frac{1}{2}$ to $2\frac{3}{4}$ in head; interorbital 8 to $8\frac{1}{5}$, convex. Gill rakers 11 + 16, very slender, short, $3\frac{1}{2}$ in gill filaments, which $1\frac{2}{5}$ in eye.

Skin smooth. Lateral line slopes down to lower third in body depth at anal origin.

D. 112 to 145, begins at first fourth in space between hind eye edge and pectoral origin, last fourth of tail free of rays, fin height $2\frac{1}{8}$ to $3\frac{1}{4}$ in total head length; A. 90 to 116, low short spines, little distinct,

first little developed or
rudimentary; pectoral 3 to
 $3\frac{2}{3}$ in head; ventral as 2
close set small scales on
ventral median line of abdomen
behind head a space equal
to postocular.

Brown above, sides and
below silvery white. Iris
slate.

India, China, East
Indies, Japan, Korea.

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R

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— (*Sphaerodon*) 219

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U. S. N. M., no. 6083. Japan.

Morrow. Length 275 mm. As Trichiurus japonicus. Eye $2\frac{1}{3}$ in snout. Ventral scale distinct.

U. S. N. M., no. 37974. Korea.

H. M. Ferebee. Length 330 mm. Eye $2\frac{1}{5}$ in snout. One (left) ventral scale present, imperfect.

U. S. N. M., no. 62495. Western Borneo.

Dr. W. L. Abbott. September 18, 1907.
Length 349 mm.

U. S. N. M., no. [with 85859]. China
Sowerby. Length * 388 to 428 mm.
Two examples. As Trichiurus japonicus.

20747. Sebatie Island, Borneo.
October 1, 1909. Albatross Collection.
Length 309 mm.

Hoplotethis metallicus ~~new species~~

575

A. h. S. P., one example. Bombay,
India. Prof. F. Hallberg. 1925.
Purchased. Length 361 mm.

Leaded

134789

753

Brown, little paler below. Back and upper side with 9 broad neutral dusky, oblique bands, counted vertically, all crossing lateral line and posterior broader. Fins brown, front of anal and ventral dusky terminally.

Arabia, Oman, Natal, South Africa. Differs from Sciaena capensis in that the dark bands are less oblique, as dark band from pectoral axil extends to last dorsal rays (not middle) or upper part of caudal peduncle.

No. 53045 A.N.S.P. Natal coast south, in 20 fathoms. 1925. H.W. Bell Marley.

Length 332 mm.

Sciaena russelii (Cuvier)

Ombrina russelii CUVIER, Règne Animal, ed. 2, vol. 2, (1829, p. 174).

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Umbrina russelii)

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layan Peninsula). — KNER, Reise Novara, Fische, (1865, p. 131 (Ceylon)).

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